

Work Order ID 139003

Friday, November 20, 2015 1:10:12 PM

139003

Page 1

Item ID: D3589-13

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Lug

Start Date: 11/13/2015 Start Qty: 8.00

Required Date: 11/13/2015 Req'd Qty: 8.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan: MLJDate: **NOV 20 2015**

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3589	C

100

0.00

100

Waterjet

Memo

FLOW CNC Waterjet

Cut as per dwg D3589

Prog Rev: CDwg Rev: C

Deburr as required

0.00

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

Quality Control

0.00

(42)

dc 16/03/01

(42)

dc 16/03/01

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
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Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
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Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

DQA: _____ Date: _____



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Work Order update only ☐

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Picklist Print

Friday, November 20, 2015 1:10:16 PM

Page 1

Work Order ID: 139003

139003

Parent Item: D3589-13

D3589-13

Parent Item Name: Lug

Start Date: 11/13/2015

Required Date: 11/13/2015

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP Rev:A 08-05-30 new issue DD verified by:ec
09-02-20 rev.b asper dwg DD verified by:EC

IPP Rev:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S16GA		Purchased		No		100	sf	231.4500	0.008	0.067369			
M304S16GA									**				
304/316 Sheet .063													

02/16/03/02

Location

Loc Qty

Loc Code

MAT019

231.45

m132797

4.45

m132835

67

m133511

160

139067

.4

DQA: _____ Date: _____

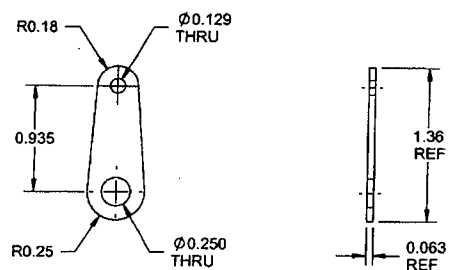


WORK ORDER NON-CONFORMANCE / UPDATE

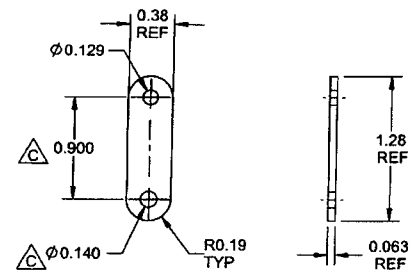
QA Closed: _____ Date: _____

Work Order update only ☐

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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
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		OTHER : ☐							



D3589-13 LUG



D3589-15 LINK

NO. 139003 MCT
15-11-17

RELEASED
2012-07-16

D3589-13/15 NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SHEET, PER AMS 5513 OR AMS 5524, OR MIL-S-5059 (ANNEALED) 2B FINISH 16 GAUGE (0.063 THICK), (REF. DART SPEC M304S16GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.01 lbs EACH

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D3589	REV. C
MFG. APPR.		SHEET 7 OF 8	
APPROVED		TITLE LATCH ASSEMBLY	SCALE
DE APPR.		NTS	
DATE	12.07.04	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Work Order ID 139036

139036

Page 1

Friday, November 13, 2015 11:16:43 AM

Item ID: D4769-041 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Wearplate Assembly
 Start Date: 11/13/2015 Start Qty: 2.00 *2* 3 Cust Item ID:
 Required Date: 11/13/2015 Req'd Qty: 2.00 *2* Customer:
 Reference:

Approvals: Process Plan: MLS Date: NOV 17 2015 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4769	C

120

0.00

120

Large Fab

Large Fab

Memo

0.04

FWD END MUST BE FORM AS PER DWG

1- Weld hardcoat on bars as per dwg

A/R 2059b hardcoat Batch#: m130145 → 2059b

2- Weld bar to wearplate as per dwg

A/R s.s. rod Batch #: m12604

3- Weld shim as per dwg

A/R s.s. rod Batch #: m126014

4- Transfer drill drain holes as per dwg

x3 2nd 16/02/16

130

QC9- Inspect visual per QSI004- Fusion Welds

0.00

130

QC

Quality Control

Memo

0.00

③ 1602-25 PD

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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OTHER : _____																																																																				

Work Order ID 139036

139036

Page 2

Friday, November 13, 2015 11:16:43 AM

Item ID: D4769-041 Accept *N9000040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Wearplate Assembly
Start Date: 11/13/2015 Start Qty: 2.00 *2* Cust Item ID:
Required Date: 11/13/2015 Req'd Qty: 2.00 *2* Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC	Memo	0.00							
Quality Control									
150		0.00							
150									
SprayPaint	Memo	0.00							
Spray Painting	Apply Rockguard on entire concave surface as per dwg A/R Rockguard Batch: <u>134278</u>								
	AS PER DWG NOTE 9 ON SHEET 1, INDICATE FWD DIRECTION IN LOCATION SHOWN WITH WHITE PAINT MARKER.								
160	QC5- Inspect part completeness to step on W/O	0.00							
160									
QC	Memo	0.00							
Quality Control									

③ 1602-25 PD

3

68-6
17 DAS
SVD 41
9-89

16-2-25

③

DAS
38
9-89

FEB 26 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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OTHER :																																																																				

Work Order ID 139036

139036

Page 3

Friday, November 13, 2015 11:16:43 AM

Item ID: D4769-041 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Wearplate Assembly
 Start Date: 11/13/2015 Start Qty: 2.00 *2* Cust Item ID:
 Required Date: 11/13/2015 Req'd Qty: 2.00 *2* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Identify as per dwg & Stock Location: <i>FP-001</i>	0.00							
170									
Packaging	Memo	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.00							
Quality Control									

43 *d* *16/02/29*

MW FEB 29 2016

MW FEB 29 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval																	
Description Work Order Deviation		Disposition		Completed By																	
				Lead hand / Supervisor Approval Verification																	
				QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																
OTHER : _____																					

Picklist Print

Friday, November 13, 2015 11:16:42 AM

Page 1

Work Order ID: 139036

139036

Parent Item: D4769-041

D4769-041

Parent Item Name: Wearplate Assembly

Start Date: 11/13/2015

Required Date: 11/13/2015

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 13.03.27 NEW ISSUE DD VERF:JLM IPP
REV:B 13.11.13 DWG REV.B DD VERF:JLM IPP REV:C
15.06.10 DWG REV.C DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4682-9		Manufactured	No				Each	10.0000					
D4682-9									**	<u>13</u>	me	16/02/24	
Wearplate Shim													

B141356 + 3

Location	Loc Qty	Loc Code
WA002	10	
126934	9	
130054	1	

D4769-1		Manufactured	No				Each	0.0000					
D4769-1									**	<u>13</u>	me	16/02/12	
Wearplate													

B138959 + 3

D4770-1		Manufactured	No				Each	2.0000					
D4770-1									**	<u>16</u>	me	16/02/10	
Bar													

Location	Loc Qty	Loc Code
WA001	2	
128421	2	

B140820 x 6

DQA: _____ Date: _____



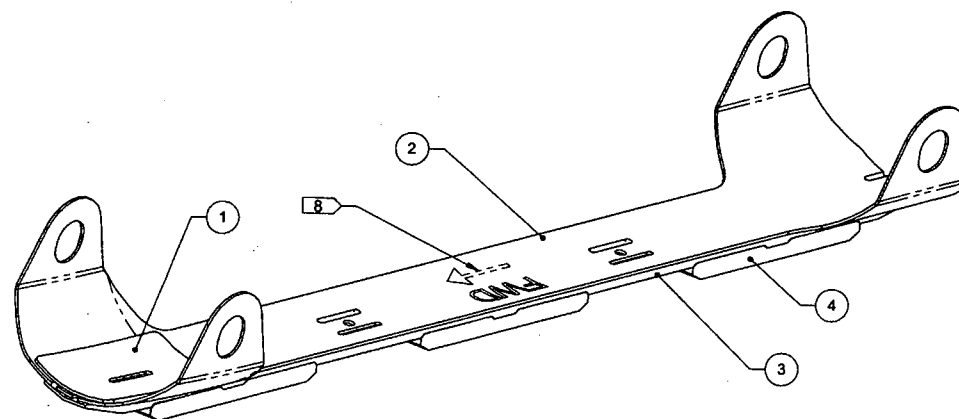
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

ITEM	QTY	P/N	DESCRIPTION
	X	D4769-041	WEARPLATE ASSY
1	1	D4682-9	WEARPLATE SHIM
2	1	D4769-1	WEARPLATE
3	2	D4770-1	BAR
4	A/R	2059B	HARDCOAT



D4769-041 WEARPLATE ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI044 METHOD 6.1
- 7) WEIGHT: 3.17 lbs
- 8) INDICATE FWD DIRECTION IN LOCATION SHOWN USING WHITE PAINT MARKER

C	D4682-9 WAS D4769-3, MINOR DIM CHANGES, WEARPLATE FORMING MODIFIED TO ACCOMMODATE MATERIAL SPRING BACK, TEXTURED COATING WAS ROCKGUARD, ADD FWD BEND TO D4769-1, ADD FWD DIRECTION INDICATION, REMOVE D4769-3	AP	15.04.01
B	THRU HOLES NOW SLOTS, VARIOUS DIMENSIONAL CHANGES, UPDATED PART WEIGHTS, REMOVED GRAIN DIRECTION, D4769-3 WAS D4682-9, ADDED D4769-3 SHT 5.	AP	13.09.10
A	NEW ISSUE	AP	13.02.13
REV.	DESCRIPTION	BY	DATE
DESIGN	AP		
DRAWN	AP		
CHECKED	AJS		
MFG. APPR.	DD		
APPROVED	HS		
DE APPR.	DS		
DATE	15.04.01		

APPROVED

DART AEROSPACE USA, INC.
KENT, WA

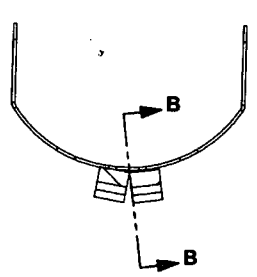
DRAWING NO. **D4769** REV. C
SHEET 1 OF 4
TITLE **WEARPLATE ASSY** SCALE NTS

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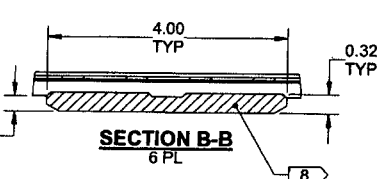
139036 MW
15-11-17

RELEASED
2015-06-08
EIN 15-551

8 7 6 5 4 3 2 1



SECTION A-A



SECTION B-B

D4682-9
WEARPLATE SHIM

TYP

FWD

10

9 11
2 PL

D4769-1
WEARPLATE

2059B HARDCOAT
TYP

D4770-1 BAR
2 PL

D4769-041 WEARPLATE ASSY

NOTES:

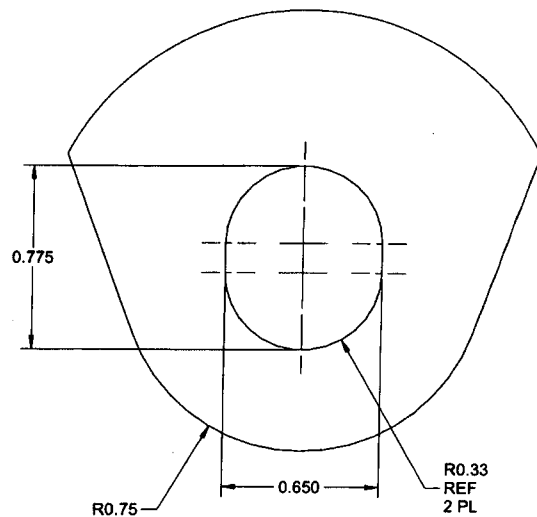
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI044 METHOD 6.1
- 7) WEIGHT: 3.17 lbs
- 8) WELDING: PER QSI 004. 2059 HARDCOAT WELD 0.32 THK X 0.50 WIDE, FLUSH WITH D4770-1 BAR ON LATERAL SURFACES, 6 PL
- 9) TRANSFER DRILL $\phi 0.188$ HOLE FROM D4769-1 WEARPLATE TO D4770-1 BAR
- 10) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.020 - 0.040 THK, PER QSI 005 SECTION 4.9
- 11) OPEN UP DRAIN HOLE IF NECESSARY TO $\phi 0.188$ AFTER APPLYING TEXTURED COATING

RELEASED
2015-06-08

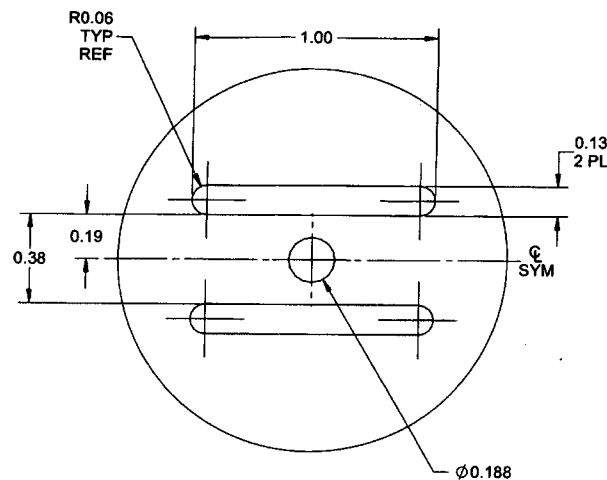
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DESIGN	AP	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	AP		
CHECKED	AJS	DRAWING NO.	REV. C
MFG. APPR.	DD	D4769	SHEET 2 OF 4
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	WEARPLATE ASSY	NTS
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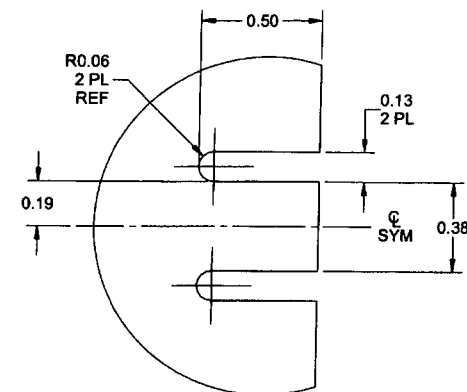
8 7 6 5 4 3 2 1



DETAIL D B6-3
SCALE 4X
4 PL



DETAIL E C4-3
SCALE 4X
2 PL



DETAIL F C1-3
SCALE 4X
2 PL

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2015-06-08

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CHECKED	AJS	DRAWING NO.	REV. C
MFG. APPR.	DD	D4769	SHEET 4 OF 4
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